Ultrasound-guided transcervical evacuation of interstitial twin pregnancy

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Objective: To report the transcervical and transisthmic evacuation of a dichorionic interstitial twin pregnancy guided by ultrasound.
Design: Case study.
Setting: Fetal medicine unit of university hospital.
Patient(s): Dichorionic twin fetuses.
Intervention(s): Three-dimensional/four-dimensional (3D/4D) ultrasound-guided transcervical and transisthmic evacuation under direct laparoscopic supervision.
Main Outcome Measure(s): Maternal clinical outcome.
Result(s): A dichorionic interstitial twin pregnancy was successfully evacuated without complications.
Conclusion(s): The safety and effectiveness of ultrasound-guided transcervical and transisthmic evacuation of dichorionic interstitial twin pregnancy warrants further evaluation. (Fertil Steril® 2011;96:927–30. ©2011 by American Society for Reproductive Medicine.)

Key Words: Dichorionic twin pregnancy, ectopic pregnancy, ectopic twin pregnancy, interstitial pregnancy, transcervical evacuation, transisthmic evacuation

Interstitial pregnancies represent 2% to 4% of all ectopic pregnancies (1, 2). As a result of assisted reproductive techniques and of the rise in pelvic inflammatory disease, the rate of interstitial pregnancies, defined as ectopic gestations implanted in the interstitial segment of the tube (located inside the muscular wall of the uterus) (1, 2), has increased in recent years (3, 4). The interstitial segment is 10 to 20 mm long, 0.7 mm wide, and highly distensible, allowing the pregnancy to remain asymptomatic, although the mean gestational age at clinical presentation may be as early as 6.9 ± 0.3 weeks (1). Because the area is richly vascularized, the diagnosis of interstitial pregnancy is a medical emergency because of the risk of rupture and death, the latter approaching 2.5% (5–7).

Ultrasound studies and measurements of β-human chorionic gonadotropin (hCG), which permit securing a diagnosis before interstitial rupture, have lowered the morbidity and mortality associated with ectopic pregnancies (8). High-resolution three- and four-dimensional (3D/4D) sonography in multiple projections, which display the anatomy in great detail, has increased the diagnostic accuracy, enabling the optimal treatment of individual patients (5).

We report a case of interstitial twin pregnancy in which 3D/4D sonography allowed the confirmation of the precise position of the sacs and their relation to the uterine cavity, the visualization of the interstice, and planning of a safe ultrasound-guided transcervical evacuation under visual laparoscopic control.

CASE REPORT

A 34-year-old patient, who had delivered normally 6 years earlier, presented in our emergency center at 9 and 6/7 weeks with mild spotting and abdominal discomfort. She reported no relevant medical history or risk factors for ectopic pregnancy. On admission to the hospital, the patient was hemodynamically stable, her blood pressure was 125/70 mm Hg, and hemoglobin 14.2 g/dL, hematocrit 41.8%; her serum concentration of β-hCG was 20,940 mIU/mL.

A transvaginal sonogram revealed the presence of an empty uterus and a 50 × 40 × 40 mm mass in the left cornual area occupied by two gestational sacs containing 16- and 9-mm embryos, respectively, both without cardiac activity, and two distinct trophoblast areas. A 3D/4D study to confirm the diagnosis of dichorionic diamniotic interstitial twin pregnancy was performed by use of a Philips IU-22 ultrasound system (Philips Medical Systems) equipped with a Matrix 6-1 Mhz transducer. We identified two gestational sacs in the interstitial segment of the tube, completely surrounded by myometrium and extending toward the proximal portion of the tube. The images displayed the line between the empty uterine cavity and the interstitial pregnancy (Fig. 1).

Considering [1] the high morbidity and mortality of surgical resection of interstitial pregnancies, [2] the patient's stable clinical status, and [3] her wish for future pregnancies, we proceeded with ultrasound-guided, transcervical and transisthmic evacuation of the twin pregnancy, with the patient's written and signed consent. Because of the large size of the mass, methotrexate (1 mg/kg body weight) was administered intramuscularly 24 hours before the ultrasound-guided suction. The procedure was performed under continuous sonographic guidance. In the first surgical stage, we confirmed the interstitial pregnancy by laparoscopy and identified the presence of an abundantly vascularized mass in the left uterine horn, approximately 5 × 5 cm in dimension, proximal to the uterotubal junction and lateral to the round ligament. We found neither blood in the abdominal cavity nor signs of uterine rupture. Both ovaries were normal (Fig. 2). In a second stage, we lowered the intraabdominal pressure to 10 mm Hg and partially filled the bladder with a Foley catheter to obtain an optimal transabdominal ultrasound window of the endometrial cavity and to guide the suction maneuvers.

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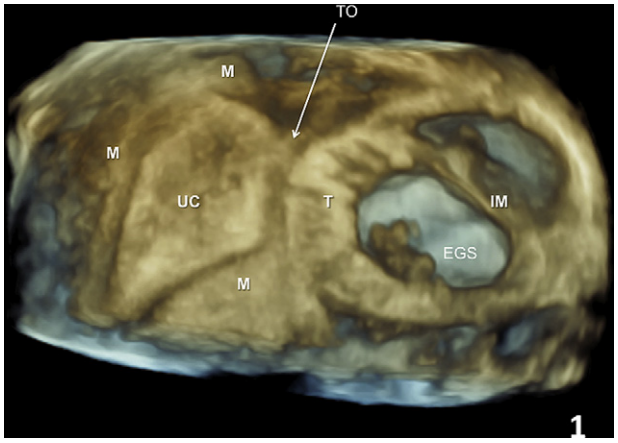
FIGURE 1

Three-dimensional image of the uterine cavity (UC), the path of the tubal ostium (TO), and its relation with the two interstitial ectopic gestational sacs (EGS). M = myometrium; T = trophoblast; IM = intraamniotic membrane.



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We used a hysterometer to locate and guide the suction cannula and to access the two gestational sacs during the vaginal procedure. Suction was applied slowly, at 80 mm Hg, through a 7-mm stiff suction cannula until we had completely evacuated both embryos and partially suctioned both trophoblasts (see Fig. 2). The laparoscopy confirmed the decrease in size of the cornual mass and the integrity of the uterine wall (see Fig. 2).

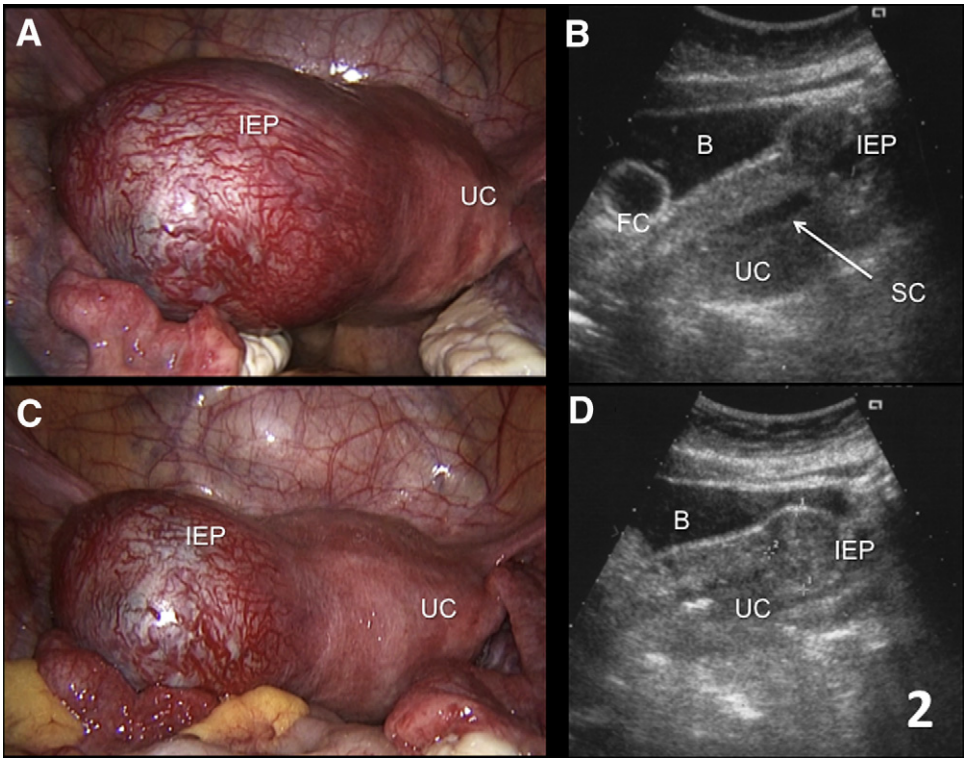
The patient recovered without vaginal bleeding or discomfort. The postoperative hemoglobin concentration was 9.1 g/dL and hematocrit 38.1%. Because of this uncomplicated postoperative status and the rapid decrease in the serum β-hCG concentration to 2,548 mIU/mL 48 hours after the operation, we did not administer a rescue dose of methotrexate. The β-hCG concentration upon discharge of the patient from the hospital was 1,193 mIU/mL, and it returned to normal within 32 days. The postoperative ultrasound examination showed a 4 $\times$ 3 cm blood-filled mass and an intact cornual wall (Fig. 3).

DISCUSSION

To our knowledge, this is the first report of an interstitial twin pregnancy conservatively treated by ultrasound-guided transcervical evacuation. The 2.0% to 2.5% mortality associated with interstitial gestations compared with 0.14% associated with tubal ectopic gestation is due to the delayed diagnosis (5, 9). The distinction between

FIGURE 2

Evacuation procedure. (**A**) Laparoscopic view of a large, abundantly vascularized, interstitial gestational mass. (**B**) Ultrasound image during transcervical aspiration. The suction cannula (SC) in the uterine cavity (UC) up to the interstitial ectopic pregnancy (IEP); the bladder (B) with Foley catheter (FC) are visible. (**C**) Intraprocedural decrease in mass size. Laparoscopy confirmed the integrity of the uterine wall throughout the procedure. (**D**) Residual 2 $\times$ 2 cm ultrasound image of the mass after the suction procedure.



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